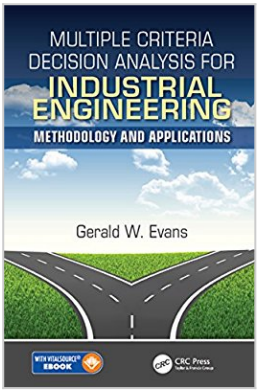


# Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series)

*Gerald William Evans*



**Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series)** Gerald William Evans

This textbook presents methodologies and applications associated with multiple criteria decision analysis (MCDA), especially for those students with an interest in industrial engineering. With respect to methodology, the book covers (1) problem structuring methods; (2) methods for ranking multi-dimensional deterministic outcomes including multiattribute value theory, the analytic hierarchy process, the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), and outranking techniques; (3) goal programming,; (4) methods for describing preference structures over single and multi-dimensional probabilistic outcomes (e.g., utility functions); (5) decision trees and influence diagrams; (6) methods for determining input probability distributions for decision trees, influence diagrams, and general simulation models; and (7) the use of simulation modeling for decision analysis.

This textbook also offers:

· Easy to follow descriptions of how to apply a wide variety of MCDA techniques

· Specific examples involving multiple objectives and/or uncertainty/risk of interest to industrial engineers

· A section on outranking techniques ; this group of techniques, which is popular in Europe, is very rarely mentioned as a methodology for MCDA in the United States

· A chapter on simulation as a useful tool for MCDA, including ranking & selection procedures. Such material is rarely covered in courses in decision analysis

· Both material review questions and problems at the end of each chapter . Solutions to the exercises are found in the Solutions Manual which will be provided along with PowerPoint slides for each chapter.

The methodologies are demonstrated through the use of applications of interest to industrial engineers, including those involving product mix optimization, supplier selection, distribution center location and transportation planning, resource allocation and scheduling of a medical clinic, staffing of a call center, quality control, project management, production and inventory control,and so on. Specifically, industrial engineering problems are structured as classical problems in multiple criteria decision analysis, and the relevant methodologies are demonstrated.

# Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series)

*Gerald William Evans*

**Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series)** Gerald William Evans

This textbook presents methodologies and applications associated with multiple criteria decision analysis (MCDA), especially for those students with an interest in industrial engineering. With respect to methodology, the book covers (1) problem structuring methods; (2) methods for ranking multi-dimensional deterministic outcomes including multiattribute value theory, the analytic hierarchy process, the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), and outranking techniques; (3) goal programming,; (4) methods for describing preference structures over single and multi-dimensional probabilistic outcomes (e.g., utility functions); (5) decision trees and influence diagrams; (6) methods for determining input probability distributions for decision trees, influence diagrams, and general simulation models; and (7) the use of simulation modeling for decision analysis.

This textbook also offers:

· Easy to follow descriptions of how to apply a wide variety of MCDA techniques

· Specific examples involving multiple objectives and/or uncertainty/risk of interest to industrial engineers

· A section on outranking techniques ; this group of techniques, which is popular in Europe, is very rarely mentioned as a methodology for MCDA in the United States

· A chapter on simulation as a useful tool for MCDA, including ranking & selection procedures. Such material is rarely covered in courses in decision analysis

· Both material review questions and problems at the end of each chapter . Solutions to the exercises are found in the Solutions Manual which will be provided along with PowerPoint slides for each chapter.

The methodologies are demonstrated through the use of applications of interest to industrial engineers, including those involving product mix optimization, supplier selection, distribution center location and transportation planning, resource allocation and scheduling of a medical clinic, staffing of a call center,

quality control, project management, production and inventory control,and so on. Specifically, industrial engineering problems are structured as classical problems in multiple criteria decision analysis, and the relevant methodologies are demonstrated.

**Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) Gerald William Evans Bibliography**

## Editorial Review

## Users Review

**From reader reviews:**

**Marie Avis:**

Do you have favorite book? When you have, what is your favorite's book? E-book is very important thing for us to understand everything in the world. Each e-book has different aim or maybe goal; it means that reserve has different type. Some people truly feel enjoy to spend their time to read a book. They are really reading whatever they acquire because their hobby is actually reading a book. Why not the person who don't like looking at a book? Sometime, man feel need book if they found difficult problem or perhaps exercise. Well, probably you should have this Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series).

**Roger Cooper:**

Reading can called brain hangout, why? Because when you are reading a book specially book entitled Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) your brain will drift away trough every dimension, wandering in most aspect that maybe unknown for but surely can become your mind friends. Imaging every word written in a guide then become one application form conclusion and explanation that will maybe you never get just before. The Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) giving you an additional experience more than blown away your brain but also giving you useful information for your better life within this era. So now let us demonstrate the relaxing pattern the following is your body and mind will likely be pleased when you are finished reading it, like winning a sport. Do you want to try this extraordinary wasting spare time activity?

**Thomas Morgan:**

Many people spending their time frame by playing outside having friends, fun activity along with family or just watching TV all day long. You can have new activity to pay your whole day by reading a book. Ugh, ya think reading a book can actually hard because you have to accept the book everywhere? It ok you can have the e-book, bringing everywhere you want in your Smart phone. Like Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) which is having the e-book version. So , why not try out this book? Let's observe.

**Willie Bergeron:**

Reading a guide make you to get more knowledge as a result. You can take knowledge and information

coming from a book. Book is prepared or printed or outlined from each source that will filled update of news. On this modern era like at this point, many ways to get information are available for you. From media social like newspaper, magazines, science e-book, encyclopedia, reference book, book and comic. You can add your knowledge by that book. Isn't it time to spend your spare time to spread out your book? Or just in search of the Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) when you needed it?

# Read Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) Gerald William Evans for online ebook

Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) Gerald William Evans Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) Gerald William Evans books to read online.

## Online Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) Gerald William Evans ebook PDF download

### Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) Gerald William Evans Doc

**Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) Gerald William Evans Mobipocket**

**Multiple Criteria Decision Analysis for Industrial Engineering: Methodology and Applications (Operations Research Series) Gerald William Evans EPub**